MEDICAL INFORMATION HANDLING SYSTEM AND METHOD

This application is a continuation application of U.S. application Ser. No. 10/438,327, filed May 15, 2003, which claims the benefit of U.S. provisional Application Ser. No. 60/381,058, filed May 15, 2002. Both applications are hereby incorporated by reference.

I. FIELD OF THE INVENTION

This invention relates to the medical records field, and more particularly, to a system for providing a longitudinal medical record.

II. BACKGROUND

There are a variety of existing medical record systems that range from pen and paper systems to electronic medical record systems. These systems have been developed for use within a particular doctor's office or other medical facility, but have not been adapted for use by first responders or far forward casualty response due to the inherent infrastructure requirements and primary focus of those systems, which generally has been recording of doctor's notes and/or ordering prescriptions.

The U.S. Army Medical Research and Material Command (USAMRMC) Telemedicine & Advanced Technology Research Center (TATRC) at Fort Detrick, Md., has been and is continuing to investigate utilization of commercially available, "off-the-shelf" (COTS) hand-held wireless devices for use in routine medical care in military environments. The objective has been and continues to be to improve military health care by improving medical decision making and reducing errors beginning at the point of care. Application of wireless information technologies to medical informatics and telemedicine applications at the point of care can achieve these objectives by 1) improving accuracy and efficiency of point of care data entry, thereby improving the quality of the medical records used in medical decision making and 2) providing immediate access at the point of care to key information and knowledge needed by military health care providers to make informed medical decisions. A system that satisfies these objectives is further needed to facilitate improved point-of-care diagnostic, epidemiology collection and bioinformatics tool. Specific areas identified to improve and satisfy these objectives are medical readiness, medical assessments and treatment, medical reporting and documentation, medical skills training, medical supply, and security of medical information. In each area information was gathered through research, practical experience, interviews, and literature searches.

Medical readiness was analyzed by conducting a review of the processing of 22,000 soldiers through a readiness site. The U.S. Military medically processes soldiers prior to every deployment whether training or real world in order to maintain a high state of medical readiness. The process is referred to as a Preparation for Oversees Movement (POM) or as the Soldiers Readiness Program (SRP). This process is accomplished by manually screening the outpatient health records, verification of required information and filling in a form on every individual to establish a field medical record.

This process currently requires many man hours of preparation and the medical part of the POM process currently takes an average of 6-8 hours using 4-6 medical screeners to medically process a Battalion sized element of approximately 500 personnel. (The times do not include the return visits for

Physical completion). During the POM process individual medical deficiencies are identified such as missing immunizations, allergy alert tags when required, outdated physicals, glasses, inserts if required and any current medications. In addition to any health related issues and physical limitations that could render the soldiers non-deployable. Once identified efforts are made to correct these deficiencies during the screening process. During the time of this study both active military and reserve military components where processed.

The units observed were at varying levels of medical readiness and deficiencies could have easily been identified if the readiness information was in computerized format. The soldiers who were deployable could accurately and efficiently be identified as not requiring processing through the readiness site. This would greatly reduce the time it takes to medically process personnel from 6-8 hours easily to 3-4 hours. In addition if this information was made available electronically it would allow commanders immediate access to readiness information that would be previously unobtainable without going through the screening process.

An analysis of the medical assessment and treatment process was performed. In combat arms units and troop medical clinics there are three environments for medical assessment and treatment that are identifiable for combat medics and first responders in the U.S. Army. The first environment is the home station where the soldiers are in a garrison environment at their unit of assignment and the medical screening process takes place by combat medics either in the company area, the battalion aid station, or the troop medical clinic. At the home station, medics have access to the Soldiers Outpatient Medical Records and authorized sick call medications and supplies to be used within their scope that they normally do not have the capacity to carry with them while they are in field environments. The Medics are responsible for primary triage and treatment of soldiers for sick call using the HSC PAM 40-7-21 Ambulatory Patient Care, Algorithm Directed Troop Medical Care or by practical knowledge obtained while working in a health clinic with physicians assistants or physicians. The patient encounter and collection of information begins with the medical screeners and continues throughout the patients screening process. Once screened the soldiers are either given medications, treatments or sent to the physician or physicians assistant for further evaluation and treatment. If the patients received treatment by a medic, a physician or physicians assistant will verify the treatment and sign off on the encounter.

The next environment is the training environment, which is when units or elements of the unit are deployed either to a local field training environment or tactical training environments. The medics are responsible for primary triage and treatment of soldiers for battle injuries, non-battle injuries, disease, psychological and sick call. The combat medics that were interviewed and assigned to the combat arms unit that served as the base of this study received minimal training in these areas and were generally not well trained due to the unit's requirement for the medics to maintain a high level of readiness of their assigned vehicles thus decreasing the amount of training required for medics to maintain a high level of medical proficiencies.

In the study group, there were eight medics with two assigned to each company, one of the medics per pair of companies was a senior medic and the other three were combat medics. In all but two instances the medics were left to their own devices when it came to the initial triage and treatments of soldiers in the training environments. In the other two instances the soldiers were evacuated immediately without the required field medical cards. In the rest of the cases